### IN THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF TEXAS DALLAS DIVISION

CONTIGUITY LLC,

Plaintiff,

v.

HIKVISION USA, INC.,

Defendant.

Case No. 3:23-cv-00160

Patent Case

Jury Trial Demanded

### SECOND AMENDED COMPLAINT FOR PATENT INFRINGEMENT

1. Contiguity LLC ("Plaintiff" OR "Contiguity") files this Second Amended Complaint and demand for jury trial seeking relief from patent infringement of the claims of U.S. Patent No. 8,031,084 ("the '084 patent") (referred to as the "Patent-in-Suit") by Hikvision USA, Inc. ("Defendant" or "Hikvision").

### **Parties**

- 2. Plaintiff is a corporation organized and existing under the laws of Delaware that maintains its principal place of business at 261 West 35th St, Suite 1003 New York, NY 10001.
  - 3. On information and belief, Defendant is a corporation organized and existing under the laws of California. Defendant employs local engineers and managers in the Northern District of Texas. Defendant stores property in the Northern District of Texas, at least in the homes of Defendant's employees. Defendant continuously maintains a physical presence in the Northern District of Texas. See Exhibit C.
  - 4. On information and belief, Defendant sells and offers to sell products and services throughout Texas, including in this judicial district, and introduces products and services that perform infringing methods or processes into the stream of

commerce knowing that they would be sold in Texas and this judicial district.

Defendant can be served with process through their registered agent, Jessica

Zhang, 18639 Railroad St., City of Industry, CA 91748, at its place of business, or anywhere else it may be found.

### **Jurisdiction**

- This is an action for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code.
- 6. This Court has exclusive subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).
- 7. This Court has personal jurisdiction over Defendant because it has engaged in systematic and continuous business activities in this District. As described below, Defendant has committed acts of patent infringement giving rise to this action within this District.

### Venue

8. Venue is proper in this District under 28 U.S.C. § 1391(c) because Defendant is a foreign corporation. In addition, Defendant has committed acts of patent infringement in this District, and Plaintiff has suffered harm in this district.

### Patent-in-Suit

9. Plaintiff is the assignee of all right, title and interest in United States Patent No. 8,031,084 (the "Patent-in-Suit"); including all rights to enforce and prosecute actions for infringement and to collect damages for all relevant times against infringers of the Patent-in-Suit. Accordingly, Plaintiff possesses the exclusive

right and standing to prosecute the present action for infringement of the Patentin-Suit by Defendant.

### THE '084 PATENT

- 10. The '084 Patent is entitled "Method and system for infraction detection based on vehicle traffic flow data," and issued 2011-10-04. The application leading to the '084 Patent was filed on 2010-10-19. A true and correct copy of the '084 Patent is attached hereto as Exhibit A and incorporated herein by reference.
- 11. As explained in the Declaration of the inventor of the '084 Patent, Leigh M. Rothschild ("Rothschild Decl."), attached hereto as Exhibit D and which is hereby incorporated by reference in its entirety, prior to the invention, conventional methods of traffic speed detection "in a congested area" "require[d] the traveler to rely upon the estimates of real-time broadcast reports over the radio over television resulting from personally observed traffic speeds (typically by helicopter or live camera feed)." Rothschild Decl., ¶ 8 (quoting '084 Patent, 1:65-2:3).
- 12. "Estimating traffic speeds by methods of personal observation was notoriously inaccurate, and there was a need in the prior art to develop systems and methods that 'provid[e] accurate information concerning congestion' and traffic speed that functioned with greater accuracy than personal observation allowed." Rothschild Decl., ¶ 9 (quoting'084 Patent, 2:4-5).
- 13. "Prior to the invention, the conventional method for determining when a vehicle was speeding required the personal intervention of a police officer. As the patent explained, "[c]onventionally, a police officer detecting a speeding motorist waits at the side of the road in a traffic flow area to detect the speed of the vehicle and must then enter the flow of traffic to signal the drive of the speeding vehicle to pull over," endangering the police officer and other motorists. Rothschild Decl., ¶ 10 (quoting '084 Patent, 2:6-12).

- 14. "To address these and other problems in the field, the invention of the '084 Patent discloses a system and method whereby, '[w]hen a speed of a vehicle exceeds a speed limit, a citation signal is generated, and the vehicle owner may be automatically cited for speeding." Rothschild Decl., ¶ 11 (quoting '084 Patent, 3:27-29).
- 15. "In one embodiment of the invention, 'the system determines if the speed limit has been exceeded by the identified vehicle. If not, the process ends. If the speed limit has been exceeded, a citation signal is generated at block 430. The citation signal may also include the speed of the vehicle, the vehicle's tag number, the vehicle's location and an image of the vehicle. A paper citation may automatically be issued at block 435 or a police officer alerted." Rothschild Decl., ¶ 12 (quoting'084 Patent, 7:11-20).
- 16. "In another aspect of the invention, 'image recognition is performed by a processor at an image capture device. Alternatively, the images captured by image capture devices may be transmitted to a central processor that performs image recognition on the various images captured by the image capture devices. Image recognition may be achieved by applying an image recognition algorithm to a first image to produce a first result, applying the image recognition algorithm to a second image to produce a second result, and by comparing the first and second results to determine if the same vehicle is in both images. The central processor may also compute a speed of a vehicle and generate a citation signal when the speed of the vehicle exceeds a speed limit. The citation signal may be a data signal that includes the speed of the vehicle and/or the difference between the vehicle speed and the posted speed limit. The image recognition algorithm may further detect a license tag or VIN of a vehicle and a make and model of a vehicle." Rothschild Decl., ¶ 13 ('084 Patent, 5:53-6:2).

- 17. "Further, databasing vehicles and then matching them in order to send a notice to the law enforcement authorities, as disclosed for example in Figure 3b of the '084 Patent, particularly at 345 and 350, was not well-understood, routine or conventional at the time of invention. Using image-based devices to capture the image of the vehicle also provides a district advantage over the prior system of using radar detection. The images captured by such devices provided records that could be used by law enforcement. By contrast, the radar systems conventionally used in the prior art did not have such an advantage." Rothschild Decl., ¶ 14.
- 18. "Prior to the invention, conventional systems and methods for traffic management and detecting vehicle speed violations did not include 'generating a citation signal when the speed of the first vehicle exceeds a predetermined speed' or 'attempting to transmit the citation signal to a device of a person associated with the vehicle,' as claimed in Claim 1 of the '084 Patent." Rothschild Decl., ¶ 15.
- 19. "Indeed, during prosecution of the '084 Patent, it was brought to the attention of the U.S. Patent & Trademark Office ("USPTO") Examiner that the prior art did not disclose or suggest the above-mentioned steps of 'generating a citation signal' and 'attempting to transmit the citation signal." Rothschild Decl., ¶ 16
- 20. "In an amendment filed on or about March 7, 2011 during prosecution of the '084 Patent, it was pointed out that the prior art did not teach 'transmitting a citation signal that indicates a violation.' Generating and transmitting a citation signal, as claimed in Claim 1 of the '084 Patent, was not even known in the prior art, much less well-understood, routine, and conventional." Rothschild Decl., ¶ 17.
- 21. "These inventive concepts are captured in the 'generating a citation signal when the speed of the first vehicle exceeds a predetermined speed' and 'attempting to transmit the citation

signal to a device of a person associated with the vehicle' steps of Claim 1 of the '084 Patent, both individually and in combination. Rothschild Decl., ¶ 18.

- 22. "The method claimed in Claim 1 of the '084 Patent was more efficient and less error-prone than conventional methods relied upon in the prior art, which relied on 'personal observation." Rothschild Decl., ¶ 19 (quoting '084 Patent, 2:4-5).
- 23. "The method claimed in Claim 1 of the '084 Patent allowed for more accurate citation of speeding violations, and reduced danger to police officers and motorists, as it did not require a police officer to actually pull over the driver of a speeding vehicle before issuing a citation." Rothschild Decl., ¶ 20 (citing '084 Patent, 2:6-12; 3:27-29; 7:11-20).
- 24. "The method claimed in Claim 1 of the '084 Patent, involving 'attempting to transmit the citation signal to the device of a person associated with the vehicle,' was also a game-changer in that it was a more precise system of notifying individuals (police or otherwise) of infractions. For example, it is more precise in that in captures with precision the vehicle, and depending on the resolution of the imaging devices, may also capture images of the driver. This is important in traffic situations where the offending party may claim that he was not driving the vehicle. Since the invention could accomplish this in real time, it provided a profound effect on driver safety, since it could cause the offending individual driver to correct his illegal driving and thus increase safe travels." Rothschild Decl., ¶ 21.
- 25. Whereas the prior art contemplated, at best, issuing a ticket when any violation is detected, it did not disclose transmitting the signal to the associated person that indicates a violation. This failure of conventional methods in the prior art did not address situations in which the driver may not be aware of the same and also missed the speed limit indications present on the road. Hence, transmission of the citation signals on a real-time basis, as claimed in Claim 1 of the

'084 Patent, can make drivers aware of speeding, and induce drivers to take proper measures for the same, which increases the driver's safety as well as that of other motorists. It also permits the driver to inform the associated technical partner (e.g., a vehicle service provider) about the fault if the speeding is due to break failure or any other technical issues. Rothschild Decl., ¶ 22.

### COUNT 1: INFRINGEMENT OF THE '084 PATENT

- 26. Plaintiff incorporates the above paragraphs herein by reference.
- 27. **Direct Infringement**. Defendant has been and continues to directly infringe one or more claims of the '084 Patent in at least this District by making, using, offering to sell, selling and/or importing, without limitation, at least the Defendant products identified in the charts incorporated into this Count below (among the "Exemplary Defendant Products") that infringe at least the exemplary claims of the '084 Patent also identified in the charts incorporated into this Count below (the "Exemplary '084 Patent Claims") literally or by the doctrine of equivalents. On information and belief, numerous other devices that infringe the claims of the '084 Patent have been made, used, sold, imported, and offered for sale by Defendant and/or its customers.
- 28. Defendant also has and continues to directly infringe, literally or under the doctrine of equivalents, the Exemplary '084 Patent Claims, by having its employees internally test and use these Exemplary Products. It is standard practice for any company to thoroughly test its products and, in this instance, for Defendant to test the functioning of the citation signal. During internal testing and use of the Exemplary Products, Defendant attempts to transmit a citation signal to a device of one of Defendant's employees driving or otherwise associated with the vehicle used as part of Defendant's internal testing. Thus, the citation signal would need to be routed directly to Defendant, and/or to an employee or agent of Defendant associated with the vehicle.

- 29. **Actual Knowledge of Infringement**. The service of this Complaint, in conjunction with the attached claim charts and references cited, constitutes actual knowledge of infringement as alleged here.
- 30. Despite such actual knowledge, Defendant continues to make, use, test, sell, offer for sale, market, and/or import into the United States, products that infringe the '084 Patent. On information and belief, Defendant has also continued to sell the Exemplary Defendant Products and distribute product literature and website materials inducing end users and others to use its products in the customary and intended manner that infringes the '084 Patent. See Exhibit B (extensively referencing these materials to demonstrate how they direct end users to commit patent infringement).
- 31. **Induced Infringement**. At least since being served by this Complaint and corresponding claim charts, Defendant has actively, knowingly, and intentionally continued to induce infringement of the '084 Patent, literally or by the doctrine of equivalents, by selling Exemplary Defendant Products to their customers for use in end-user products in a manner that infringes one or more claims of the '084 Patent.
- 32. Exhibit B includes charts comparing the Exemplary '084 Patent Claims to the Exemplary Defendant Products. As set forth in these charts, the Exemplary Defendant Products practice the technology claimed by the '084 Patent. Accordingly, the Exemplary Defendant Products incorporated in these charts satisfy all elements of the Exemplary '084 Patent Claims.
- 33. Plaintiff therefore incorporates by reference in its allegations herein the claim charts of Exhibit B.
- 34. Plaintiff is entitled to recover damages adequate to compensate for Defendant's infringement.

### CONDITIONS PRECEDENT

35. Plaintiff is a non-practicing entity, with no products to mark. Plaintiff has plead all statutory requirements to obtain pre-suit damages. Further, all conditions precedent for recovery are met.

### **JURY DEMAND**

36. Under Rule 38(b) of the Federal Rules of Civil Procedure, Plaintiff respectfully requests a trial by jury on all issues so triable.

### PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests the following relief:

- A. A judgment that the '084 Patent is valid and enforceable
- B. A judgment that Defendant has infringed directly and indirectly one or more claims of the '084 Patent;
- C. An accounting of all damages not presented at trial;
- D. A judgment that awards Plaintiff all appropriate damages under 35 U.S.C. § 284 for Defendant's continuing or future infringement, up until the date such judgment is entered with respect to the '084 Patent, including pre- or post-judgment interest, costs, and disbursements as justified under 35 U.S.C. § 284;
- E. And, if necessary, to adequately compensate Plaintiff for Defendant's infringement, an accounting:
  - i. that this case be declared exceptional within the meaning of 35 U.S.C. § 285
     and that Plaintiff be awarded its reasonable attorneys fees against Defendant that it incurs in prosecuting this action;

- ii. that Plaintiff be awarded costs, and expenses that it incurs in prosecuting this action; and
- iii. that Plaintiff be awarded such further relief at law or in equity as the Court deems just and proper.

DATED: January 16, 2024 Respectfully submitted, Ramey LLP

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Attorneys for CONTIGUITY LLC.

### **CERTIFICATE OF SERVICE**

Pursuant to the Federal Rules of Civil Procedure and LR5, I hereby certify that all counsel of record who have appeared in this case are being served on this day of January 16, 2024, with a copy of the foregoing via email and ECF filing.

/s/ William P. Ramey, III William P. Ramey, III

### EVIDENCE OF USE FOR U.S. PATENT NO. 8,031,084

Title: Method and system for infraction detection based on vehicle traffic flow data

Application No.: <u>US 12/907,702</u>

Filing Date: October 19, 2010

Issue Date: October 04, 2011

### **Accused Product:**





### What we offer

Hikvision's Speed Measurement Solution boasts high accuracy and low detection deviation. It excels in scenarios on both high- and low-speed roads. It can effectively regulate driver behavior, reduce traffic accidents caused by driving too fast or too slow, and elevate road safety. Over all, Hikvision's solution improves the efficiency of road safety management for governments, enterprises, and users in general.



Checkpoint speed measurement



Segment speed measurement



Portable speed measurement



Precautionary speed measurement

Source: https://www.hikvision.com/en/solutions/solutions-by-function/speed-measurement/

### **Evidence of Us**

Claim Language	Evidence of Infringement
A method of infraction detection based on vehicle traffic flow data, the method comprising:	Hikvision's Speed Measurement Solution automatically detects traffic violation events such as speeding vehicles by capturing images of vehicles using Hikvision cameras. The speed of each vehicle is tracked to determine if a violation (infraction detection) is going to occur.
	HIKVISION°
	Four ways of speeding detection to improve road safety
	To address speeding challenges on road networks, <u>Hikvision's highly intelligent Speed</u> Measurement Solution detects offending vehicles in both high-speed and low-speed environments, and it helps increase road safety and provide an effective deterrent for speeding in the future.
	The speed measurement solution incorporates Hikvision cameras, radar sensors, traffic management servers, and control room infrastructure. The technologies used by these products to detect and report on traffic violations include AI-powered deep learning algorithms (including ANPR, vehicle attribute analysis), radar video fusion technology, and advanced imaging technology.
	All of the technologies that make up this solution are connected and managed via the Hikvision HikCentral management system. This means traffic authorities can manage their speed violation management activities more effectively. They can also detect and respond to incidents far more quickly with a centralized view, helping to maximize safety for road users.
	Source: https://www.hikvision.com/en/newsroom/blog/four-ways-of-speeding-detection-to-improve-road-safety/

# **Claim Language Evidence of Infringement** Radar video fusion technology Coordinating radar and video systems are transformed and unified in time and space through an Al-fusion algorithm. The target position, speed, characteristics and other information are identified to carry out high-precision, long-distance and all-weather detection and analysis. Source: https://www.hikvision.com/en/solutions/solutions-by-function/speed-measurement/

# claim Language acquiring first imagery of a plurality of vehicles at a first location at a first time; acquiring second imagery of a plurality of vehicles at a second location at a second time; identifying a first vehicle from the acquired first imagery and the acquired second imagery;

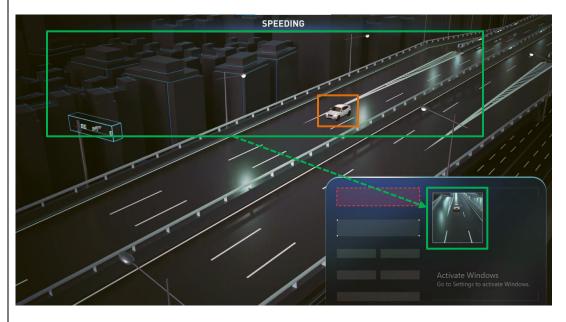
### **Evidence of Infringement**

The Hikvision camera present on the road collects the images of the multiple vehicles at different location and time.

## Four ways of speeding detection to improve road safety

The speed measurement solution incorporates Hikvision cameras, radar sensors, traffic management servers, and control room infrastructure. The technologies used by these products to detect and report on traffic violations include Al-powered deep learning algorithms (including ANPR, vehicle attribute analysis), radar video fusion technology, and advanced imaging technology.

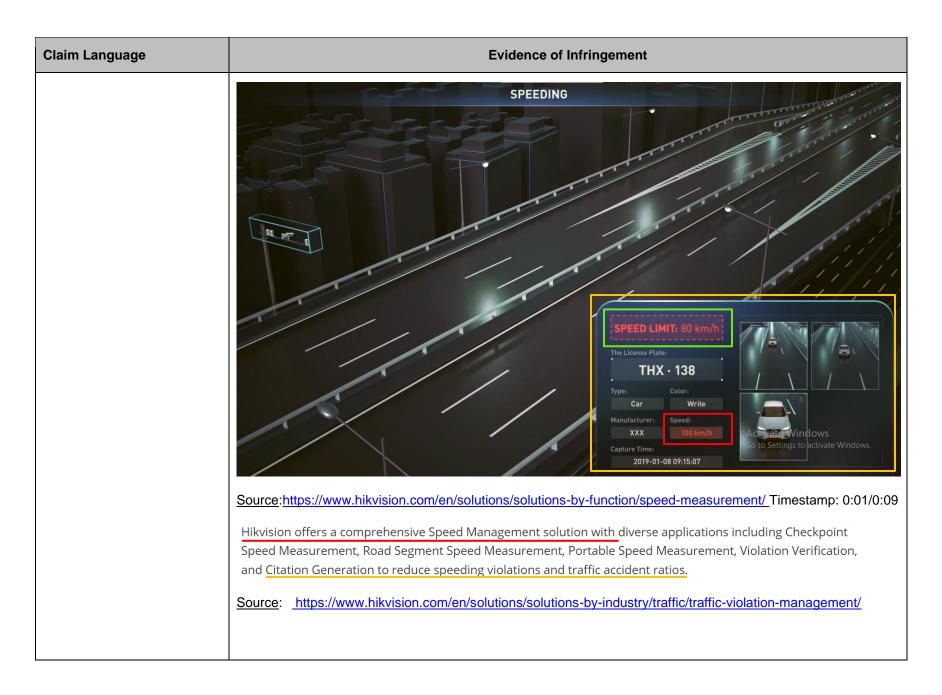
Source: https://www.hikvision.com/en/newsroom/blog/four-ways-of-speeding-detection-to-improve-road-safety/



Source: https://www.hikvision.com/en/solutions/solutions-by-function/speed-measurement/\_Timestamp: 0:06/0:09

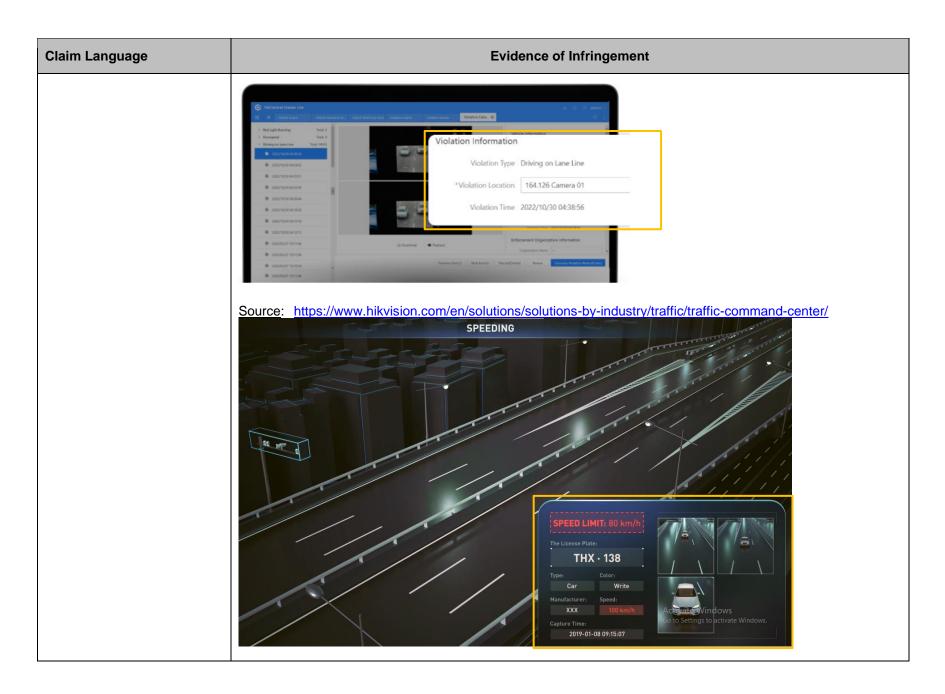
# **Claim Language Evidence of Infringement** SPEEDING Source: https://www.hikvision.com/en/solutions/solutions-by-function/speed-measurement/ Timestamp: 0:05/0:09 Improving enforcement efficiency Radar video fusion technology Coordinating radar and video systems are transformed and unified in time and space through an Al-fusion algorithm. These traffic cameras extract attributes such as a vehicle's make, model, color and license along with plate number, and then tag and archive that data with time and location information and The target position, speed, characteristics and other information are store it in the database. Traffic authorities can search a specific identified to carry out high-precision, long-distance and all-weather vehicle in the system to get its historical path if needed. detection and analysis. Source: https://www.hikvision.com/en/solutions/solutions-by-function/speed-measurement/ Source: https://www.hikvision.com/en/solutions/solutions-by-industry/traffic/traffic-command-center/

Claim Language	Evidence of Infringement
determining a speed of the first vehicle;	Hikvision Speed Measurement Solution uses radar and camera together to identifies the vehicle that violates the speed limit and generates a citation for the over-speeding vehicle ("generating a citation signal").
generating a citation signal when the speed of the first vehicle exceeds a predetermined speed; and	Radar video fusion technology
	Coordinating <u>radar and video systems</u> are transformed and unified in time and space through an Al-fusion algorithm.
	The target position, speed, characteristics and other information are identified to carry out high-precision, long-distance and all-weather detection and analysis.
	Enhanced safety at major roads
	<ul> <li>Regulates driving behaviors, reduces traffic accident rates, improves traffic safety</li> <li>Detects speeding vehicles, provides forensic evidence, locates suspect's routes</li> <li>High speed measurement accuracy with deviation of -4 to 0 km/h</li> </ul>
	<ul> <li>Provides abundant vehicle feature data – license plate number, speed, vehicle color, manufacturer, type</li> <li>Phone use, seatbelt status and other violations detection</li> </ul>
	Source: https://www.hikvision.com/en/solutions/solutions-by-function/speed-measurement/



Claim Language	Evidence of Infringement
	Hikvision offers a comprehensive Violation Verification Management solution with diverse applications including violation management, violation verification, and automated citation creation.
	Simplifying violation detection and verification
	Al-powered traffic cameras automatically detect and instantly report traffic violation events to the command center – events such as running red lights, improper lane usage, and using a phone while driving. And traffic authorities can then search for and verify reported events manually.
	© Historial Material Internation in the Control of
	Violation Information  Violation Type Driving on Lane Line
	*Violation Location 164.126 Camera 01  *Zionasiania  Violation Time 2022/10/30 04:38:56
	SECTION OF THE S
	Account to the American Service S
	Source: https://www.hikvision.com/en/solutions/solutions-by-industry/traffic/traffic-command-center/

Claim Language	Evidence of Infringement
attempting to transmit the citation signal to a device of a person associated with the vehicle.	When the vehicle exceeds the predetermined car limit, a citation (or traffic violation event) is generated. The traffic violation event (here, over-speeding alert) is send to police and then police issues traffic tickets to drivers of the vehicles. It is standard practice for any company, as for Hikvision, to thoroughly test its products and, in this instance, for Hikvision to test the functioning of the citation signal. During internal testing and use of the Exemplary Products, Hikvision attempts to transmit a citation signal to a device of one of Hikvision's employees driving or otherwise associated with the vehicle used as part of Defendant's internal testing. Thus, the citation signal would need to be routed directly to Hikvision, and/or to an employee or agent of Hikvision associated with the vehicle.
	Enhanced safety at major roads
	<ul> <li>Regulates driving behaviors, reduces traffic accident rates, improves traffic safety</li> <li>Detects speeding vehicles, provides forensic evidence, locates suspect's routes</li> <li>High speed measurement accuracy with deviation of -4 to 0 km/h</li> <li>Provides abundant vehicle feature data – license plate number, speed, vehicle color, manufacturer, type</li> <li>Phone use, seatbelt status and other violations detection</li> </ul>
	Source: https://www.hikvision.com/en/solutions/solutions-by-function/speed-measurement/
	Hikvision offers a comprehensive Speed Management solution with diverse applications including Checkpoint Speed Measurement, Road Segment Speed Measurement, Portable Speed Measurement, Violation Verification,
Specification Support:	and Citation Generation to reduce speeding violations and traffic accident ratios.
The server 210 and the data store 250 may be accessed by a law enforcement agency 280 via the communications network 220 and the citation signal may be generated and sent to a law enforcement agency 280 by the host server 210.	Source: <a href="https://www.hikvision.com/en/solutions/solutions-by-industry/traffic/traffic-violation-management/">https://www.hikvision.com/en/solutions/solutions-by-industry/traffic/traffic-violation-management/</a>
US Patent No. 8,031,084 at col. 5, lines 7- 11.	



Claim Language	Evidence of Infringement
2. The method of claim 1, wherein the citation signal is communicated to a law enforcement agency.	Source: https://www.hikvision.com/en/solutions/solutions-by-function/speed-measurement/_Timestamp: 0:01/0:09 TRAFFIC TICKET MANAGEMENT
3. The method of claim 2, wherein at least a portion of at least one of the acquired first and second imagery is communicated to the law enforcement agency.	Verifying Violations with Recorded Evidence  Traffic cameras automatically identify and report traffic violation events such as running red lights, speeding, improper lane usage, illegal parking, using a phone while driving, and failure to use a seat belt. Traffic officers can then search for and verify reported events manually. And when violations are confirmed, traffic officers can issue traffic tickets using the captured video as evidence.
	Source: <a href="https://www.hikvision.com/en/solutions/solutions-by-industry/traffic/traffic-command-center/">https://www.hikvision.com/en/solutions/solutions/solutions-by-industry/traffic/traffic-command-center/</a> The speed violation data is firstly sent to police (law enforcement agency) for review.  Hikvision offers a comprehensive Speed Management solution with diverse applications including Checkpoint Speed Measurement, Road Segment Speed Measurement, Portable Speed Measurement, Violation Verification, and Citation Generation to reduce speeding violations and traffic accident ratios.
Specification Support:  The traffic flow data store 250 can also store citation fine data and be used by server 210 to provide this information to a law enforcement agency 280 or to the police officer via the onboard navigation system 260 in the vehicle 150.  US Patent No. 8,031,084 at	Source: <a href="https://www.hikvision.com/en/solutions/solutions-by-industry/traffic/traffic-violation-management/">https://www.hikvision.com/en/solutions/solutions-by-industry/traffic/traffic-violation-management/</a> TRAFFIC TICKET MANAGEMENT
	Verifying Violations with Recorded Evidence  Traffic cameras automatically identify and report traffic violation events such as running red lights, speeding, improper lane usage, illegal parking, using a phone while driving, and failure to use a seat belt. Traffic officers can then search for and verify reported events manually. And when violations are confirmed, traffic officers can issue traffic tickets using the captured video as evidence.  Source: https://www.hikvision.com/en/solutions/solutions-by-industry/traffic/traffic-command-center/
col. 5, lines 48 - 52.	Source: https://www.hikvision.com/en/solutions/solutions-by-industry/traffic/traffic-command-center/

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